

author's course of teaching, and owes its existence rather to the desire to emphasise that experience than to the supposed existence of a gap in anatomical literature which it may be held to fill.

As the writer desires attention to be directed to misstatements or improvements, we may limit our remarks to matters of detail, since of such accurately known types as those he has chosen the bulk of the descriptions can hardly be other than correct. In serial order, then, we note the following points on which revision is required.

The mucous canals of the dog-fish are termed sense-organs (p. 2), instead of the tubes containing the sense-organs; water is said to enter the spiracle as well as the mouth; the anus is described as the outlet of the cloaca (p. 3); and an ear-opening is affirmed and denied in the same paragraph (p. 15). But it is in connection with the nervous system that we encounter the least satisfactory description. No mention is made of the pre-olfactory nerve which has been demonstrated in elasmobranchs, nor of the buccalis branch of the lateral line system; whilst the old and incorrect statement that the lateralis nerve is a branch of the vagus is again repeated. The spinal nerves and limb-plexuses, to which so much attention has lately been directed, are omitted.

In the description of the perch the account of the nervous system is equally unsatisfactory, and there is the same absence of any attempt to delimit the nerves of the lateralis group or to point out their function and distribution. In this respect the work is very much behind the times. A serious slip occurs on p. 45, where, in connection with the ear of the perch, it is stated:—

"At the anterior end of the sacculus is a small pocket containing a minute otolith called the lagena; this is the structure which in mammals becomes the cochlea."

As it stands the sentence is nonsense, since, of course, the pocket, and not the otolith, is the lagena. A similar slovenliness of composition is responsible for such sentences as (p. 67) "Note the position of the limbs in reference to the trunk, which in *Necturus* is of a primitive character," in which it is hard to say whether the position or the trunk is referred to; or this, "If the human arm be extended straight out from the body with the thumb up . . . the back of the hand will be dorsal . . ." We should have thought in the position referred to the hand would be vertical.

The description of the frog and of the turtle call for no special remark, but in his prefatory account of the pigeon the author states:—

"Another effect which has been correlated with the loss of teeth in the bird is the development of a greater intelligence. Inasmuch as the weight of the head is strictly limited by the conditions of the animal's existence, a larger brain could develop than would have been possible if the teeth which characterised primitive birds had not disappeared."

A larger brain and greater intelligence are certainly not convertible terms, and it is as misleading to

speak of "primitive" birds in this connection as it is to assume that birds' brains have enlarged since Cretaceous times. Such a statement, however, is pardonable in comparison with the explanation of the air sacs on p. 169:—"Their function is somewhat obscure but they probably help supply (*sic*) the lungs during rapid flight." The need for revising the physiological statements made in this book may be shown by this further quotation:—"it is largely because of the development of feathers that birds have become warm blooded"! (p. 166).

The use of the book would have been aided by putting practical directions into special type, and by giving fuller instructions for the injection of blood-vessels. But, notwithstanding these drawbacks, the work remains as a useful guide to those teachers who wish to arrange a course in comparative anatomy.

F. W. G.

TARIFF REFORM AND THE EMPIRE.

Compatriots' Club Lectures. First Series. Edited by the Committee of the Compatriots' Club. Pp. vi+327. (London: Macmillan and Co., Ltd., 1905.) Price 8s. 6d. net.

THIS volume consists of a series of papers and lectures given at meetings of the Compatriots' Club, a non-partisan body, "constituted" (as the prefatory note states) "in March, 1904, with the object of advancing the ideal of a united British Empire, and of advocating these principles of constructive policy on all constitutional, economic, defensive, and educational questions which help towards the fulfilment of that ideal."

Although the club is non-partisan, the same cannot be said of the papers in this volume. They are mostly controversial in tone, and too frequently adopt the vocabulary of the political platform. The object throughout is to advocate Mr. Chamberlain's Tariff Reform proposals. The two most prominent writers on economic subjects among the contributors are engaged in almost purely personal conflicts with their opponents on the fiscal question. Prof. Ashley, in "Political Economy and the Tariff Problem," gives an interesting, and indeed masterly, sketch of the progress of economic science from Adam Smith and Friedrich List to the present time, with the main object, however, of providing a counterblast to the manifesto on the fiscal question by fourteen English economic experts, which appeared some two years ago. Dr. Cunningham, in "Tariff Reform and Political Morality," attacks the same manifesto on the curious ground that it was an attempt to "provide the public with excuses for apathy"—"to undertake to do their thinking for them." He makes a similar complaint, with perhaps more point, about another manifesto, signed by some eminent ecclesiastics, which appeared in the *Guardian*, and, incidentally, comes into conflict with Mr. Harold Cox and the editor of the *Echo*.

Mr. J. L. Garvin's paper, read at the inaugural

meeting of the club, and since published as a supplement in the *National Review*, on "The Principles of Constructive Economics as Applied to the Maintenance of Empire," which appears first in the volume, describes the club's *raison d'être*. Conscious purpose and effective action of the State itself are to take the place of *laissez faire*. What follows is a re-statement of Mr. Chamberlain's proposals and an estimate of their effects upon national development and Imperial unity. So far he is clear enough, but his argumentative methods are not convincing. He discards the use of statistics, since they do not rouse enthusiasm, and since "no cause was ever carried by figures." Enthusiasm without knowledge is dangerous, and the cause which Mr. Garvin advocates can hardly be carried without figures. Consequently, his recapitulation of the familiar assertions concerning the decline of British industries carry little weight. Mr. Garvin, indeed, admits the general prosperity of this country, but considers it the result of our exceptional natural resources. Elsewhere he attributes the prosperity of Germany and America to their tariffs, not (so far as can be gathered from this paper) to their natural resources. He also makes a bold attack upon the "fallacy" that exports balance imports, but argues from the point of view of *supply*, leaving *demand* out of consideration.

Mr. H. W. Wilson, in "Tariff Reform and National Defence," makes a strong plea for efficiency in the services, and especially for the increased superiority of our naval power. He regards Tariff Reform as the only possible means of raising the required revenue. He adds two valuable tables illustrating the naval expenditure and strength of the chief Powers.

In "Imperial Preference and the Cost of Food," Sir Vincent Caillard maintains that preference will not raise prices, apparently because the foreign producer can defeat the preference given. Sir John A. Cockburn deals with "The Evolution of Empire"; Mr. H. A. Gwynne with "The Proper Distribution of the Population of the Empire," in the course of which he makes some startling suggestions for encouraging emigration to the colonies by State action; and Mr. John W. Hills, in "Colonial Preference in the Past," summarises the history of the "old colonial system," without, however, noticing its effect upon the loss of the American colonies.

J. H. S.

IMPERIAL FOREST POLICY.

Manual of Forestry. Vol. i. Forest Policy in the British Empire. By Dr. W. Schlich, F.R.S. Third edition, revised and enlarged. Pp. ix+246. (London: Bradbury, Agnew and Co., Ltd.) Price 6s. net.

IN the present edition Prof. Schlich has made some important additions which add considerably to the value of the volume. The volume is divided into three parts, viz. part i., the utility of forests; part ii., the State in relation to forestry; and part iii., forestry in the British Empire.

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In part i. the direct and indirect utility of forests are considered, and the author has stated in a very clear and concise manner the great importance of forests to man. Sometimes people are too apt to estimate the utility of forests according to the money value of the timber grown, and to forget the important and beneficial influence which proper afforestation confers on the soil, the climate, and the whole sister industry of agriculture. The indirect utility of forests is of importance, not only to the proprietor and agriculturist, but to the entire State, and is one of those questions of general interest which has been almost wholly neglected in the past. The author deserves great credit for bringing this matter so prominently into notice.

The duty of the State in relation to forestry forms the subject-matter of part ii., and here the author is entirely at home with a subject to which he has given much time and thought, and on which he is a recognised authority. The extent to which the State should go in maintaining, or assisting in the maintenance of, forests is carefully considered from a thoroughly practical point of view.

In part iii. the wider question of forestry in the British Empire is dealt with in a very masterly fashion. As a result of his long experience and wide knowledge, the author is well able to deal with this subject. Space forbids our entering into details, but we are quite certain that but few people realise the enormous amount of revenue which is at present lying dormant or actually lost to the Empire through the deplorable inattention that is given to many of our colonial forests. India is, of course, a notable exception, and the success which has attended proper forest policy in that part of the Empire should stimulate other colonies to follow the good example. This, however, they seem slow to do. Nevertheless, there are signs of awakening interest, for example, in Canada. Many of our colonial forests have suffered severely at the hands of settlers through pure lack of knowledge. It is quite possible to use the forest without abusing it, and to cut timber in such a way that the forest will continue to give a sustained, if not increasing, yield; but this implies a proper knowledge of forestry, and here the author makes out a strong case for improved educational facilities, the end results of which would be increased revenue and benefits from our forests at home and in all parts of the British Empire.

As an example of what may be done in this direction, Prof. Schlich shows (p. 106) how, principally through the exertions of one man, namely, Dr. Brandis, "the greater portion of the Lower Burmah teak forests was saved, forests which now yield an average annual net revenue of 2½ million rupees."

The volume contains many well-chosen photographs to illustrate the different points mentioned in the text, as well as a rainfall map of India. A useful appendix dealing with forestry in the United States is also included in the book. The author is to be congratulated on the production of a work which is of true importance from a national point of view.